Patent claims

1. A single-chain antibody molecule, which is directed specifically against LRP/LR and which comprises the amino acid sequence SEQ ID No.2, and homologs or fragments thereof, and homologs of the fragments.

2. The single-chain antibody molecule as claimed in claim 1, which has the amino acid sequence SEQ ID No. 2.

3. A cDNA, which comprises the nucleotide sequence SEQ ID No. 1.

4. A cDNA, which contains the nucleotide sequence SEQ ID No. 1.

5. A single-chain antibody molecule, which is directed specifically against LRP/LR and which comprises the amino acid sequence SEQ ID No. 4, and homologs or fragments thereof, and homologs of the fragments.

6. The single-chain antibody molecule as claimed in claim 5, which has the amino acid sequence SEQ ID No. 4.

7. A cDNA, which comprises the nucleotide sequence SEQ ID No. 3.

8. A cDNA, which contains the nucleotide sequence SEQ ID No. 3.

9. The antibody molecule as claimed in either of claims 1 or 5, which is modified by one or more amino acid exchange/s and/or one or more amino acid deletion/s and/or one or more amino acid insertion/s on one or more positions for increasing the stability and/or for changing the biophysical and/or biochemical properties.

10. The antibody molecule as claimed in claim 9, the amino acid insertion being a c-myc tag which is inserted between the F_L domain and the hexahistidine tag.

11. The cDNA as claimed in one of claims 3, 4, 7 and 8, which corresponds to the sequence at the cDNA level of the modified antibody molecules as claimed in claim 9 or 10.

12. The antibody molecule as claimed in one of claims 1, 2, 5, 6, 9 and 10, which is modified on one or more positions for increasing the stability and/or for changing the biophysical and/or biochemical properties by post-translational modifications.

13. The antibody molecule as claimed in claim 12, the post-translational modifications being a glycosylation, phosphorylation, amidation and/or acylation.

14. A replication or expression vector which carries a cDNA as claimed in one of claims 3, 4, 7, 8 and 11.

15. The vector as claimed in claim 14, it being a recombinant adeno-associated virus (AAV).

16. A host cell which is transformed with a replication or expression vector as claimed in claim 14 or 15.

17. The host cell as claimed in claim 16, it being a mammalian cell.

18. The host cell as claimed in claim 17, it being a muscle cell of the type C2.7.

19. The host cell as claimed in claim 17, it being a baby hamster kidney cell.

20. The host cell as claimed in claim 17, it being a neuronal cell of the type PC12.

21. The host cell as claimed in claim 17, it being a neuronal cell of the type N2a.

22. The host cell as claimed in claim 17, it being a neuronal cell of the type GT1.

23. The host cell as claimed in claim 17, it being an NIH3T3 cell.

24. A process for the production of an antibody molecule as claimed in one of claims 1, 2, 5 and 6, which comprises culturing host cells as claimed in claim 15 under conditions effective for the expression of an antibody molecule according to the invention.

25. A pharmaceutical composition which comprises an antibody molecule as claimed in one of claims 1, 2, 5 and 6 in combination with a pharmaceutically acceptable diluent and/or vehicle.

26. The pharmaceutical composition as claimed in claim 25, the composition being suitable for the treatment of prion diseases.

27. A diagnostic composition which comprises an antibody molecule according to the invention as claimed in one of claims 1, 2, 5 and 6 in combination with an acceptable diluent and/or vehicle.

28. The diagnostic composition as claimed in claim 27, which is suitable for detection in body fluids.

29. The diagnostic composition as claimed in claim 27, the body fluids being blood or cerebrospinal fluid.

30. The diagnostic composition as claimed in claim 27, which is suitable for detection in tissues.

31. The diagnostic composition as claimed in claim 30, the tissues being brain tissue.

32. The diagnostic composition as claimed in claim 30, the tissues being lymphatic tissue.

33. The diagnostic composition as claimed in claim 27, which is suitable for the detection of malignant degeneration (cancer).

34. The diagnostic composition as claimed in claim 33, the detection being carried out in body fluids.

35. The diagnostic composition as claimed in claim 34, the body fluids being blood or cerebrospinal fluid.

36. The diagnostic composition as claimed in claim 33, the detection being carried out in tissues.

37. The use of an antibody molecule as claimed in one of claims 1, 2, 5 and 6 for the production of a medicament for the treatment of a prion disease or cancer.